Amendments to the Claims

The below listing of claims will replace all prior versions, and listings, of claims in the present application:

1. through 61. **Cancelled.**

62. (Previously Amended) A method for making a silane-terminated polyurethane composition comprising:

a) providing a prepolymer component, a monomeric component, and optionally at least one multifunctional component, wherein the prepolymer component comprises a silane-terminated polyurethane prepolymer, the monomeric component comprises a silane-terminated monomeric diisocyanate, and the optional multifunctional component comprises at least one of a trisilane, a tetrasilane, or a silane adduct component; and

b) combining and reacting the prepolymer component, the monomeric component, and optionally the at least one multifunctional component to form a silane-terminated polyurethane reaction product;

wherein the silane-terminated polyurethane reaction product has a tensile strength of about 4 MPa or greater and an elongation of about 200% or greater; and,

wherein the prepolymer component comprises a silane-terminated polyurethane prepolymer component comprising a prepolymer reaction product of at least one diisocyanate and at least one polyol with a mole ratio of isocyanate groups to hydroxyl groups of about 0.5:1 to about 0.9:1, said prepolymer reaction product is further reacted with a monomeric diisocyanate, followed by termination with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein R represents a C_1- to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1.

63. (Original) The method of claim 62, further comprising applying the reaction product to a substrate.

64. (Original) The method of claim 63, wherein said applying is selected from the group consisting of spraying, brushing, rolling, squeegeeing, scraping, troweling, and combinations thereof.

65. (Original) The method of claim 63, wherein the substrate is selected from the group consisting of concrete, asphalt, stone, rubber, plastic, metal, and wood.

66. (Previously Amended) The method of claim 62, wherein:

the silane-terminated monomeric diisocyanate comprises at least one monomeric diisocyanate fully reacted with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein R represents a C_1 to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1; and,

wherein the optional multifunctional component comprises at least one of:

A) a polyether trisilane component comprising at least one of:

i) the reaction product of at least one polyether triol terminated with an isocyanatosilane endcapper of the formula:

$$OCN\text{-}A^2\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein A^2 represents a C_1 to C_6 linear or branched alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; and x is 0 or 1; or

ii) the multifunctional reaction product of at least one polyether triol terminated with at least one diisocyanate with a mole ratio of isocyanate groups to hydroxy groups of about 1.5:1 to about 2:1, said multifunctional reaction product terminated with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein R represents a C_1 to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1;

B) a polyether tetrasilane component comprising at least one of:

i) the reaction product of at least one polyether tetraol terminated with an isocyanatosilane endcapper of the formula:

$$OCN\text{-}A^2\text{-}Si(R^1)_x(OR^2)_{3-x}$$

wherein A^2 represents a C_1 to C_6 linear or branched alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; and x is 0 or 1; or

ii) the multifunctional reaction product of at least one polyether tetraol terminated with at least one diisocyanate with a mole ratio of

isocyanate groups to hydroxy groups of about 1.5:1 to about 2:1, said multifunctional reaction product terminated with an aminosilane endcapper of the formula:

$$R\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

or a mercaptosilane endcapper of the formula:

$$HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$$

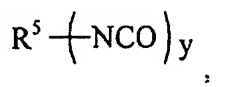
wherein R represents a C_1 to C_{10} alkyl group, a group having the formula $-A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)\text{-}CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; and x is 0 or 1; or

C) silane adduct component comprising the reaction product of at least one of:

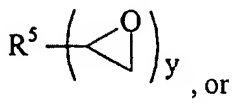
a) i) $HS\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$, or

$R^7\text{-}NH\text{-}A^1\text{-}Si(R^1)_x(OR^2)_{3-x}$ and

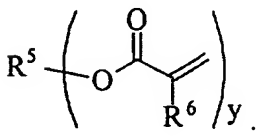
ii) at least one of:



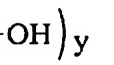
,



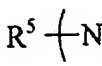
, or



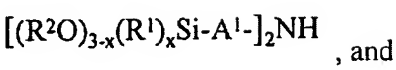
;

b)  and $OCN\text{-}A^2\text{-}Si(R^1)_x(OR^2)_{3-x}$;

c) i) at least one of:

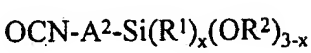


or

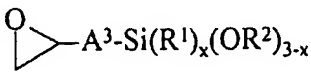


, and

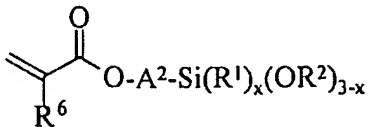
ii) at least one of:



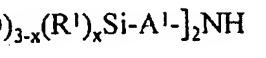
,



, or

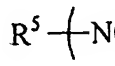


;

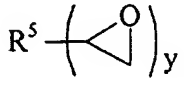
d) i)  and

ii) a diisocyanate;

e) i) a polyether triamine and ii) at least one of:



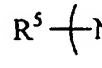
, or



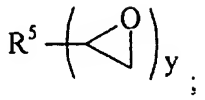
; or

f) at least one of:

i) diethylenetriamine or triethylenetetramine, and ii) at least one of:



, or



wherein A^2 represents a C_1 to C_6 linear, or branched alkylene group; A^3 represents a C_1 to C_{10} linear, branched or cyclic alkylene group optionally interrupted with one or more ether oxygen atoms; R^5 represents a branched aliphatic hydrocarbon residue, a branched aliphatic ether residue, or an alkyl-substituted isocyanurate residue; R^6 represents H or a CH_3 group; R^7 represents H, a C_1 to C_{10} alkyl group, a group having the formula $-A^1-Si(R^1)_x(OR^2)_{3-x}$, or a group having the formula $-CH(COOR^3)-CH_2(COOR^4)$; A^1 represents a C_1 to C_{10} linear, branched or cyclic alkylene group; R^1 represents a CH_3 or C_2H_5 group; R^2 represents a C_1 to C_4 alkyl group; R^3 represents a C_1 to C_{13} alkyl group; R^4 represents a C_1 to C_{13} alkyl group; x is 0 or 1; and y is 3 or 4.

67. (Cancelled)

68. (Cancelled)

69. (Original) The method of claim 66, wherein the mercaptosilane comprises (3-mercaptopropyl)trimethoxysilane.

70. (Previously Amended) The method of claim 62, wherein the at least one polyol is selected from the group consisting of polyether polyols, polyester polyols, and combinations thereof.

71. (Previously Amended) The method of claim 62, wherein the at least one polyol is selected from the group consisting of polypropylene glycols, polytetramethylene glycols, polyoxyalkylene diols and triols, polycaprolactone diols and triols, and combinations thereof.

72. (Previously Amended) The method of claim 62, wherein the at least one polyol is selected from the group consisting of polyethylene glycols, polypropylene glycols, polytetramethylene glycols, polyethers prepared by the copolymerization of cyclic ethers

selected from the group consisting of ethylene oxide, propylene oxide, trimethylene oxide, tetrahydrofuran, and mixtures of these cyclic ethers, with aliphatic polyols selected from the group consisting of ethylene glycol, 1,3-butanediol, diethylene glycol, dipropylene glycol, 1,2-propylene glycol, 1,3-propylene glycol, 1,4-butylene glycol, and mixtures of these polyols, and combinations selected from this group of glycols and polyethers.

73. (Original) The method of claim 66, wherein the diisocyanate is selected from the group consisting of hexamethylene diisocyanate (HDI), 4,4'-diphenylmethane diisocyanate (MDI), 2,4'-diphenylmethane diisocyanate, blends of 4,4'-diphenylmethane diisocyanate (MDI) with 2,4'-diphenylmethane diisocyanate, 2,4-toluene diisocyanate (TDI), 2,6-toluene diisocyanate, blends of 2,4-toluene diisocyanate (TDI) with 2,6-toluene diisocyanate, 1-isocyanato-3,3,5-trimethyl-5-isocyanatomethylcyclohexane (IPDI), dicyclohexylmethane-4,4'-diisocyanate, and combinations thereof.

74. (Original) The method of claim 66, wherein the diisocyanate comprises a blend of 4,4'-diphenylmethane diisocyanate (MDI) with 2,4'-diphenylmethane diisocyanate.

75. (Original) The method of claim 66, wherein the aminosilane is selected from the group consisting of secondary aminosilanes having two methoxy groups, secondary aminosilanes having three methoxy groups, secondary aminosilanes having two ethoxy groups, secondary aminosilanes having three ethoxy groups, and combinations thereof.

76. (Original) The method of claim 66, wherein the aminosilane is selected from the group consisting of bis(trimethoxysilylpropyl)amine, 3-ethylamino-2-methylpropyltrimethoxysilane, N-(n-butyl)-3-aminopropyltrimethoxysilane, and combinations thereof.

77. (Original) The method of claim 66, wherein the isocyanatosilane is selected from the group consisting of isocyanatosilanes having two methoxy groups, isocyanatosilanes having three methoxy groups, isocyanatosilanes having two ethoxy groups, isocyanatosilanes having three ethoxy groups, and combinations thereof.

78. (Original) The method of claim 66, wherein the isocyanatosilane comprises 3-isocyanatopropyltrimethoxysilane.

79. (Previously Amended) The method of claim 62, wherein the at least one polyol has a number average molecular weight in the range of about 500 to about 20000.

80. (Previously Amended) The method of claim 62, wherein the at least one polyol comprises a polypropylene glycol with a number average molecular weight in the range of about 4000 to about 12000, and wherein said polypropylene glycol has a degree of unsaturation of less than about 0.04 meq/g.

81. (Original) The method of claim 62, wherein the reaction product has a tensile strength of about 10 MPa or greater.

82. (Original) The method of claim 62, wherein the reaction product has an elongation of about 300% or greater.